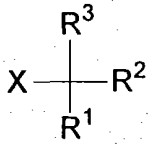
THEREFORE WE CLAIM:

1. A crosslinking agent comprising an ungelled reaction product of the following reactants:

(a) at least one aminoplast resin; and

(b) a compound selected from at least one of:

(i) compounds having the following structure (I):

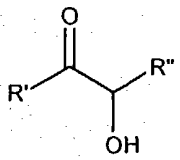


(I)

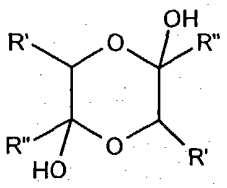
wherein X is aromatic; R^1, R^2, and R^3 can be the same or different and each independently represents H, (cyclo)alkyl having from 1 to 12 carbon atoms, aryl, alkaryl, aralkyl, or an active hydrogen-containing group,

provided that at least one of R^1, R^2, and R^3 represents an active hydrogen-containing group which is reactive with the aminoplast resin (A);

(ii) compounds having the following structure (II) or (III):



(II)



(III)

where R' and R" are the same or different and each independently represents an aromatic group or an alkyl group having 1 to 12 carbon atoms; and

(iii) compounds different from (i) and (ii) and having a melting point of at least 80°C,

wherein the crosslinking agent has a glass transition temperature of at least 10°C and is essentially free of functional groups which are reactive with the aminoplast resin.

2. The crosslinking agent of claim 1, wherein the aminoplast resin (a) is or is derived from at least one crosslinking agent selected from glycoluril, aminotriazine, and benzoguanamine.

3. The crosslinking agent of claim 2, wherein the aminoplast resin comprises an aminotriazine compound.

4. The crosslinking agent of claim 3, wherein the aminotriazine compound comprises an (alkoxyalkyl) aminotriazine having one or less non-alkylated NH bond per triazine ring.

5. The crosslinking agent of claim 4, wherein the (alkoxyalkyl) aminotriazine compound comprises an (methoxymethyl) aminotriazine compound.

6. The crosslinking agent of claim 4, wherein the (alkoxyalkyl) aminotriazine compound has a degree of polymerization of 3.0 or less.

7. The crosslinking agent of claim 2, wherein the aminoplast resin (a) comprises an alkoxylated aldehyde condensate of glycoluril.

8. The crosslinking agent of claim 7, wherein the alkoxylated aldehyde condensate of glycoluril comprises tetramethoxy methylglycoluril.

9. The crosslinking agent of claim 1, wherein the compound (b) comprises at least one compound having the structure (I).

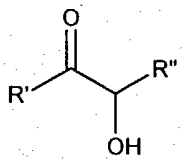
10. The crosslinking agent of claim 9, wherein at least one of R^1, R^2, or R^3 represents an active hydrogen-containing group selected from hydroxyl, amino, amido, thiol, carboxyl, carbamate, urea, and mixtures thereof.

11. The crosslinking agent of claim 9, wherein at least one of R^1, R^2, or R^3 represents a group comprising at least one hydroxyl group.

12. The crosslinking agent of claim 9, wherein the compound (b) comprises benzyl alcohol.

13. The crosslinking agent of claim 1, wherein the compound (b) comprises at least one of compound b (ii).

14. The crosslinking agent of claim 13, wherein the compound (b) comprises a hydroxyl functional group-containing compound having the following structure (II):



(II)

or dimer derivatives thereof, wherein R' and R" are the same or different and each independently represents a (cyclo)alkyl group having 1 to 12 carbon atoms or an aromatic group.

15. The crosslinking agent of claim 14, wherein one or both of R' and R" represent aromatic groups.

16. The crosslinking agent of claim 15, wherein the compound (b) comprises a compound selected from benzoin, hydroxycyclohexyl phenyl ketone, and mixtures thereof.

17. The crosslinking agent of claim 16, wherein the compound (b) comprises benzoin.

18. The crosslinking agent of claim 16, wherein the compound (b) comprises hydroxycyclohexyl phenyl ketone.

19. The crosslinking agent of claim 1, wherein compound (b) comprises at least one of compound (b) (iii).

20. The crosslinking agent of claim 19, wherein the compound (b) comprises at least one compound selected from borneol, norborneol, isoborneol, 5-norbornen-2-ol, 1-adamantanemethanol, 1-adamantanol, and 2-methyl-2-adamantanol.

21. The crosslinking agent of claim 20, wherein the compound (b) comprises isoborneol.

22. The crosslinking agent of claim 1, wherein compound (b) comprises at least one compound selected from benzyl alcohol, benzoin, isoborneol, and mixtures thereof.

23. The crosslinking agent of claim 1 comprising the ungelled reaction product of the following:

(a) at least one aminoplast resin comprising (alkoxyalkyl) aminotriazine having one or less non-alkylated NH bond per triazine ring; and

(b) at least one compound selected from benzoin, isoborneol, benzyl alcohol, and mixtures thereof,

wherein said crosslinking agent has a glass transition temperature of at least 10°C. and is essentially free of hydroxyl groups.

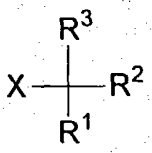
24. A method for preparing a crosslinking agent, the method comprising the following steps:

(I) combining the following reactants:

(a) at least one aminoplast resin;

(b) at least one compound having active hydrogen groups reactive with aminoplast resin (a), said compound selected from at least one of:

(i) compounds having the following structure (I):

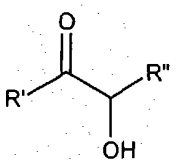


(I)

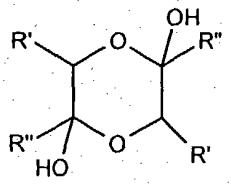
wherein X is aromatic; R^1, R^2, and R^3 can be the same or different and each independently represents H, (cyclo)alkyl having from 1 to 12 carbon atoms, aryl, alkaryl, aralkyl, or an active hydrogen-containing group,

provided that at least one of R^1, R^2, and R^3 represents an active hydrogen-containing group which is reactive with the aminoplast resin (A);

(ii) compounds having the following structure (II) or (III):



(II)



(III)

where R' and R" are the same or different and each independently represents an aromatic group or an alkyl group having 1 to 12 carbon atoms; and

(iii) compounds different from (i) and (ii) and having a melting point of at least 80°C to form a reaction admixture;

(II) heating the reaction admixture to a temperature ranging from 90°C to 135°C; and

(III) maintaining the temperature achieved in (II) for a time sufficient to obtain an ungelled reaction product having a glass transition temperature of at least 10°C which is essentially free of active hydrogen-containing groups as determined by infrared spectroscopy.

25. The method of claim 24, wherein the aminoplast resin (a) is or is derived from at least one crosslinking agent selected from glycoluril, aminotriazine, and benzoguanamine.

26. The method of claim 25, wherein the aminoplast resin comprises an aminotriazine compound.

27. The method of claim 26, wherein the aminotriazine compound comprises an (alkoxyalkyl) aminotriazine having one or less non-alkylated NH bond per triazine ring.

28. The method of claim 27, wherein the aminotriazine compound comprises an (methoxymethyl) aminotriazine compound.

29. The method of claim 27, wherein the (alkoxyalkyl) aminotriazine compound has a degree of polymerization of 3.0 or less.

30. The method of claim 25, wherein the aminoplast resin (a) comprises an alkoxylated aldehyde condensate of glycoluril.

31. The crosslinking agent of claim 30, wherein the alkoxylated aldehyde condensate of glycoluril comprises tetramethoxy methylglycoluril.

32. The method of claim 24, wherein the compound (b) comprises at least one compound having the structure (I).

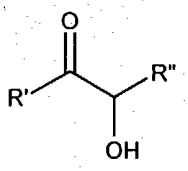
33. The method of claim 32, wherein at least one of R^1, R^2, or R^3 represents an active hydrogen-containing group selected from hydroxyl, amino, amido, thiol, carboxyl, carbamate, urea, and mixtures thereof.

34. The method of claim 32, wherein at least one of R^1, R^2, or R^3 represents a group comprising at least one hydroxyl group.

35. The method of claim 32, wherein the compound (b) comprises benzyl alcohol.

36. The method of claim 24, wherein the compound (b) comprises at least one of compound (b) (ii).

37. The method of claim 36, wherein the compound (b) comprises a hydroxyl functional group-containing compound having the following structure (II):



(II)

or dimer derivatives thereof, wherein R' and R" are the same or different and each independently represents an (cyclo)alkyl group having 1 to 12 carbon atoms or an aromatic group.

38. The method of claim 37, wherein one or both of the R' and R" represent aromatic groups.

39. The method of claim 38, wherein the compound (b) comprises a compound selected from benzoin, hydroxycyclohexyl phenyl ketone, and mixtures thereof.

40. The method of claim 39, wherein the compound (b) comprises benzoin.

41. The method of claim 39, wherein the compound (b) comprises hydroxycyclohexyl phenyl ketone.

42. The method of claim 24, wherein the compound (b) comprises at least one of compound (b) (iii).

43. The method of claim 42, wherein the compound (b) comprises at least one compound selected from borneol, norborneol, isoborneol, 5-norbornen-2-ol, 1-adamantanemethanol, 1-adamantanol, and 2-methyl-2-adamantanol.

44. The method of claim 43, wherein the compound (b) comprises isoborneol.

45. The method of claim 24, wherein compound (b) comprises at least one compound selected from benzyl alcohol, benzoin, isoborneol, and mixtures thereof.

46. A method for preparing a crosslinking agent, the method comprising the following steps:

(I) combining the following reactants:

(a) at least one aminoplast resin comprising (alkoxyalkyl) aminotriazine having one or less non-alkylated NH bond per triazine ring; and

(b) at least one compound selected from benzoin, isoborneol, benzyl alcohol and mixtures thereof,

(II) heating the reaction admixture to a temperature ranging from 90°C to 135°C; and

(III) maintaining the temperature achieved in (II) for a time sufficient to obtain an ungelled reaction product having a glass transition temperature of at least 10°C which is essentially free of active hydrogen-containing groups as determined by infrared spectroscopy.

47. A curable powder coating composition comprising a solid particulate film-forming mixture of the following components:

(1) a polymer containing reactive functional groups, said polymer having a glass transition temperature of at least 30°C; and

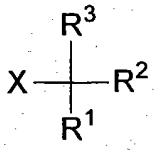
(2) a crosslinking agent having functional groups reactive with the functional groups of component (1),

said crosslinking agent comprising an ungelled reaction product of the following reactants:

(a) at least one aminoplast resin; and

(b) a compound selected from at least one of

(i) compounds having the following structure (I):

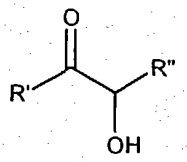


(I)

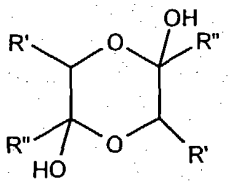
wherein X is aromatic; R^1, R^2, and R^3 can be the same or different and each independently represents H, (cyclo)alkyl having from 1 to 12 carbon atoms, aryl, alkaryl, aralkyl, or an active hydrogen-containing group,

provided that at least one of R^1, R^2, and R^3 represents an active hydrogen-containing group which is reactive with the aminoplast resin (A);

(ii) compounds having the following structure (II) or (III):



(II)



(III)

where R' and R" are the same or different and each independently represents an aromatic group or an alkyl group having 1 to 12 carbon atoms; and

(iii) compounds different from (i) and (ii) and having a melting point of at least 80°C,

wherein the crosslinking agent has a glass transition temperature of at least 10°C and is essentially free of functional groups which are reactive with the aminoplast resin.

48. The curable powder coating composition of claim 47, wherein the polymer (1) is selected from the group consisting of acrylic polymers, polyester polymers, polyurethane polymers, polyepoxide polymers, polyether polymers, and mixtures thereof.

49. The curable powder coating composition of claim 47, wherein the polymer (1) comprises hydroxyl and/or carbamate functional groups.

50. The curable powder coating composition of claim 47, wherein the polymer (1) comprises epoxy and/or hydroxyl functional groups.

51. The curable powder coating composition of claim 47, wherein the polymer (1) is present in the composition in an amount ranging from 20 to 80 weight percent based on total weight of the composition.

52. The curable powder coating composition of claim 47, wherein the aminoplast resin (a) is or is derived from at least one crosslinking agent selected from glycoluril, aminotriazine, and benzoguanamine.

53. The curable powder coating composition of claim 52, wherein the aminoplast resin comprises an aminotriazine compound.

54. The curable powder coating composition of claim 53, wherein the aminotriazine compound comprises an (alkoxyalkyl) aminotriazine having one or less non-alkylated NH bond per triazine ring.

55. The curable powder coating composition of claim 54, wherein the (alkoxyalkyl) aminotriazine compound comprises an (methoxymethyl) aminotriazine compound.

56. The curable powder coating composition of claim 54, wherein the (alkoxyalkyl) aminotriazine compound has a degree of polymerization of 3.0 or less.

57. The curable powder coating composition of claim 52, wherein the aminoplast resin (a) comprises an alkoxylated aldehyde condensate of glycoluril.

58. The curable powder coating composition of claim 57, wherein the alkoxylated aldehyde condensate of glycoluril comprises tetramethoxy methylglycoluril.

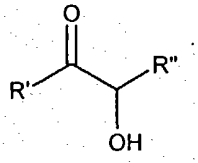
59. The curable powder coating composition of claim 47, wherein the compound (b) comprises at least one compound having the structure (I).

60. The curable powder coating composition of clam 59, wherein at least one of R^1, R^2,or R^3 represents an active hydrogen-containing group selected from hydroxyl, amino, amido, thiol, carboxyl, carbamate, urea, and mixtures thereof.

61. The curable powder coating composition of claim 59, wherein at least one of R^1, R^2, or R^3 represents a group comprising at least one hydroxyl group.

62. The curable powder coating composition of claim 47, wherein the compound (b) comprises at least one of compound (b) (ii).

63. The curable powder coating composition of claim 62, wherein the compound (b) comprises a hydroxyl functional group-containing compound having the following structure (II):



(II)

or dimer derivatives thereof, wherein R' and R" are the same or different and each independently represents an (cyclo)alkyl group having 1 to 12 carbon atoms or an aromatic group.

64. The curable powder coating composition of claim 63, wherein one or both of R' and R" represent aromatic groups.

65. The curable powder coating composition of claim 64, wherein the compound (b) comprises a compound selected from benzoin, hydroxycyclohexyl phenyl ketone and mixtures thereof.

66. The curable powder coating composition of claim 65, wherein the compound (b) comprises benzoin.

67. The curable powder coating composition of claim 65, wherein the compound (b) comprises hydroxycyclohexyl phenyl ketone.

68. The curable powder coating composition of claim 47, wherein compound (b) comprises a compound selected from benzoin, isoborneol, triphenylmethanol, N-tert-butylacrylamide, p-acetophenetidide, and mixtures thereof.

69. The curable powder coating composition of claim 47, wherein the compound (b) (iii) comprises at least one compound selected from borneol, norborneol, isoborneol, 5-norbornen-2-ol, 1-adamantanemethanol, 1-adamantanol, and 2-methyl-2-adamantanol.

70. The curable powder coating composition of claim 69, wherein the compound (b) comprises isoborneol.

71. The curable powder coating composition of claim 47, wherein compound (b) comprises at least one compound selected from benzyl alcohol, benzoin, isoborneol, and mixtures thereof.

72. The curable powder coating composition of claim 47, wherein the crosslinking agent (2) is present in an amount ranging from 5 to 95 percent by weight based on total weight of the composition.

73. The curable powder coating composition of claim 48 comprising the following components:

(1) a hydroxyl functional group-containing polymer having a glass transition temperature of at least 30°C; and

(2) a crosslinking agent having functional groups reactive with the hydroxyl functional groups of component (1), said crosslinking agent comprising an ungelled reaction product of the following reactants:

(a) at least one aminoplast resin comprising (alkoxyalkyl)aminotriazine having one or less non-alkylated NH bond per triazine ring; and

(b) at least one compound selected from benzoin, isoborneol, benzyl alcohol, and mixtures thereof,

wherein said crosslinking agent has a glass transition temperature of at least 10°C. and is essentially free of functional groups which are reactive with aminoplast resin.

74. The curable powder coating composition of claim 48 comprising a film-forming, solid particulate mixture of the following components:

(1) a polymer containing reactive epoxy functional groups, said polymer having a glass transition temperature of at least 30°C; and

(2) a crosslinking agent comprising an ungelled reaction product of the following reactants:

(a) at least one aminoplast resin comprising (alkoxyalkyl)aminotriazine having one or less non-alkylated NH bond per triazine ring;

(b) at least one compound selected from benzoin, isoborneol, benzyl alcohol, and mixtures thereof,

wherein said crosslinking agent has a glass transition temperature of at least 10°C. and is essentially free of functional groups which are reactive with aminoplast resin; and

(3) a crosslinking agent having carboxylic acid functional groups reactive with the epoxy groups of (1).

75. A multilayer composite coating composition comprising a base coat deposited from a film-forming coating base coating composition and a top coat over at least a portion of the base coat deposited from a curable powder top coating composition comprising a solid particulate film-forming mixture of the following components:

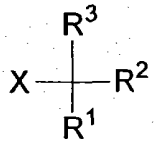
(1) a polymer containing reactive functional groups, said polymer having a glass transition temperature of at least 30°C; and

(2) a crosslinking agent having functional groups reactive with the functional groups of the polymer (1), said crosslinking agent comprising an ungelled reaction product of the following reactants:

(a) at least one aminoplast resin; and

(b) at least one compound having active hydrogen-containing groups reactive with aminoplast resin (a), said compound selected from at least one of:

(i) compounds having the following structure (I):

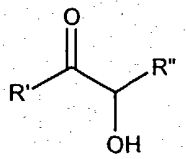


(I)

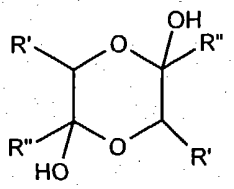
wherein X is aromatic; R^1, R^2, and R^3 can be the same or different and each independently represents H, (cyclo)alkyl having from 1 to 12 carbon atoms, aryl, alkaryl, aralkyl, or an active hydrogen-containing group,

provided that at least one of R^1, R^2, and R^3 represents an active hydrogen-containing group which is reactive with the aminoplast resin (A);

(ii) compounds having the following structure (II) or (III):



(II)



(III)

where R' and R" are the same or different and each independently represents an aromatic group or an alkyl group having 1 to 12 carbon atoms; and

(iii) compounds different from (i) and (ii) and having a melting point of at least 80°C

wherein said crosslinking agent has a glass transition temperature of at least 10°C. and is essentially free of functional groups which are reactive with aminoplast resin.

76. A substrate coated with the powder coating composition of claim 47.

77. A substrate coated with the multilayer composite coating composition of claim 75.